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PATENT APPLICATION

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IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Byron A. Alcorn

Confirmation No.: 2666

Application No.: 10/086,160

Examiner: Kee M. Tung

Filing Date: 02/27/2002

Group Art Unit: 2676

Title: Distributed Resource Architecture and System

Mail Stop Appeal Brief-Patents
Commissioner For Patents
PO Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF

Sir:

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on **01/18/2005**.

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) $500.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

( ) (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d) for the total number of months checked below:

( )	one month	$120.00
( )	two months	$450.00
( )	three months	$1020.00
( )	four months	$1590.00

( ) The extension fee has already been filled in this application.

(X) (b) Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account **08-2025** the sum of **$500.00**. At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees. A duplicate copy of this sheet is enclosed.

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Respectfully submitted,

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPEAL FROM THE EXAMINER TO THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	Byron A. Alcorn
Serial No.:	10/086,160
Filing Date:	02/27/2002
Group Art Unit:	2676
Examiner:	Kee M. Tung
Title:	Distributed Resource Architecture and System

MAIL STOP: APPEAL BRIEF-PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

APPEAL BRIEF

Applicant has appealed to the Board of Patent Appeals and Interferences from the decision of the Examiner mailed November 29, 2004, finally rejecting Claims 1-35. Applicant filed a Notice of Appeal on January 18, 2005. Applicant respectfully submits herewith this Appeal Brief with authorization to charge the statutory fee of $500.00.

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REAL PARTY IN INTEREST

The present application was assigned to Hewlett-Packard Company as indicated by an assignment from the inventor recorded on July 2, 2002 in the Assignment Records of the United States Patent and Trademark Office at Reel 013057, Frame 0829. The present application was subsequently assigned to Hewlett-Packard Development Company, L.P. as indicated by an assignment from Hewlett-Packard Company recorded on June 18, 2003 in the Assignment Records of the United States Patent and Trademark Office at Reel 013776, Frame 0928.

RELATED APPEALS AND INTERFERENCES

There are no known appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in this pending appeal.

STATUS OF CLAIMS

Claims 1-35 stand rejected pursuant to a Final Office Action mailed November 29, 2004. Claims 1-35 are presented for appeal.

STATUS OF AMENDMENTS

No amendment has been filed subsequent to the mailing of the Final Office Action.

SUMMARY OF INVENTION

Independent Claim 1

Embodiments of the present invention as defined by independent Claim 1 are directed toward a distributed resource system (10) comprising a plurality of compute resource units (16) operable to execute graphics applications and generate graphics data and a plurality of visualization resource units (40) communicatively coupled to the plurality of compute resource units (16) and operable to render pixel data from the graphics data. Embodiments of the distributed resource system (10) as defined by independent Claim 1 also comprise a first network (42), a network compositor (44) coupled to the plurality of visualization resource units (40) via the first network (42) and operable to receive the pixel data therefrom, the network compositor (44) operable to synchronize the received pixel data from the plurality of visualization

resource units (40) and composite the synchronized pixel data into a least one image, and a plurality of display devices (30) at least one of which is located remotely from the plurality of compute resource units (16) and coupled to the network compositor (44) operable to display the at least one image. (at least at pages 4-6, paragraphs 0017-0019, pages 6-7, paragraphs 0022-0023, figure 3).

Independent Claim 10

Embodiments of the present invention as defined by independent Claim 10 are directed toward a distributed resource system (10) comprising a plurality of distributed first resource units (16) operable to generate a first set of data, a plurality of second resource units (40) operable to generate a second set of data in response to the first set of data, and a traffic controller (44) located remotely from at least one of the plurality of second resource units (40) and communicatively coupled to the plurality of second resource units (40) and operable to collect the second set of data from the plurality of second resource units (40) and control a data transmission rate of at least one of the plurality of second resource units (40) to synchronize the collected data. Embodiments of the distributed resource system (10) as defined by independent Claim 10 also comprise a plurality of display devices (30) coupled to the traffic controller (44) and operable to receive the synchronized data for display to a plurality of users. (at least at pages 4-6, paragraphs 0017-0019, pages 6-7, paragraphs 0022-0023, figure 3).

Independent Claim 19

Embodiments of the present invention as defined by independent Claim 19 are directed toward a distributed resource system (10) comprising a plurality of first resource means (16) executing at least one computer application and generating a plurality of first data, a plurality of second resource means (40) coupled to the plurality of first resource means (16) for generating a plurality of second data from the plurality of first data received from the plurality of first resource means (16), and controller means (44) coupled to the plurality of second resource means (40) for receiving the plurality of second data therefrom and operable to control a data transmission rate of at least one of the plurality of second resource means (40) to synchronize and composite the plurality of second data. Embodiments of the

distributed resource system (10) as defined by independent Claim 19 also comprise display means (30) coupled to the controller means (44) for receiving and displaying the synchronized and composited data therefrom. (at least at pages 4-6, paragraphs 0017-0019, pages 6-7, paragraphs 0022-0023, figure 3).

Independent Claim 25

Embodiments of the present invention as defined by independent Claim 25 are directed toward a distributed resource graphics processing method comprising generating a plurality of sets of graphics data at geographically disparate locations, rendering the plurality of sets of graphics data and generating a plurality of sets of rendered pixel data, receiving the plurality of sets of rendered pixel data synchronizing the plurality of sets of pixel data for an image frame from different sources (40) by controlling a data transmission rate of at least one of the different sources (40) and compositing pixel data associated with the same image frames into at least one image, and displaying the at least one image. (at least at pages 4-6, paragraphs 0017-0019, pages 6-7, paragraphs 0022-0023, figure 3).

Independent Claim 32

Embodiments of the present invention as defined by independent Claim 32 are directed toward a distributed graphics visualization architecture (10) comprising a plurality of compute resource units (16), a plurality of graphics pipelines (24) coupled to the plurality of compute resource units (16), a plurality of local compositors (28) coupled to the plurality of graphics pipelines (24), a network compositor (44) communicatively coupled to the plurality of local compositors (28) via a network (42) and operable to synchronize and composite graphics data received from the plurality of local compositors (28) into at least one graphical image, and a plurality of display devices (30) coupled to the network compositors (44) and operable to receive and display the at least one graphical image. (at least at pages 4-6, paragraphs 0017-0019, pages 6-7, paragraphs 0022-0023, figures 3-4).

GROUNDS OF REJECTION

The Examiner provisionally rejected Claims 1-35 under the judicially created doctrine of obviousness-type double patenting over claims 1-39 of co-pending application serial no. 10/086,060. Claims 1-39 of co-pending application serial no. 10/086,060 are set forth for convenience in the Evidence Appendix hereof.

ARGUMENT

A. Standard

Obviousness-type Double Patenting

The basic concept of double patenting is that the same invention cannot be patented more than once, which, if happened, would result in a second patent which would expire some time after the original patent and extend the protection timewise. *General Foods Corp. v. Studiengesellschaft Kohle, mbH*, 972 F.2d 1272, 1279-80, 23 U.S.P.Q.2D 1839, 1845 (Fed. Cir. 1992). The claims of the patented invention and the rejected claims must be compared to determine if the patented invention claims are patentably distinct from the rejected claims. *Id.* at 1278, 23 U.S.P.Q.2d at 1843. Additionally, a double patenting rejection must include clear evidence to establish why an alleged variation of an invention claimed in a prior patent would have been obvious. *In re Kaplan*, 789 F.2d 1574, 229 U.S.P.Q.2d 678, 683 (Fed. Cir. 1986). Further, to establish a *prima facie* case of obviousness, the Examiner must "explain why the proposed modification would be obvious." M.P.E.P. § 706.02. Moreover, the determination of whether an invention is obvious considers "if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious." 35 U.S.C § 103 (emphasis added).

B. Argument

1. Claims 1-35

Claims 1-35 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting over claims 1-39 of co-pending application serial no. 10/086,060. Of the rejected claims, Claims 1, 10, 19, 25 and 32 are independent. Additionally, Applicant respectfully submits that a Notice of Allowance has been received corresponding to co-pending application serial no. 10/086,060. Applicant

respectfully submits that each independent claim is patentably distinct from the claims of co-pending application serial no. 10/086,060, and thus remaining claims 2-9, 11-18, 20-24, 26-31 and 33-35 which depend from their respective independent claims, are also patentable.

In the Final Office Action, the Examiner states that "[a]lthough the conflicting claims are not identical, they are not patentably distinct from each other because a switching fabric of [co-pending] application would have been obvious in view of the network connection of the present application since both are considered as a well known connection means in the art" (Final Office Action, page 2). Without addressing the accuracy of the Examiner's statement in the Final Office Action, Applicant respectfully submits that the Examiner's statement, without more, does not establish a *prima facie* case of obviousness. First, the Examiner has not considered the subject matter of Claims 1-35 as a whole in making an obviousness determination. Instead, the Examiner has apparently made an obviousness determination based on a single claim element, namely, "a switching fabric" (Final Office Action, page 2). Further, the Examiner has apparently made an obviousness determination directed toward the subject matter of co-pending application serial no. 10/086,060 instead of the subject matter of the present Application ("because a switching fabric of [co-pending] application would have been obvious in view of the network connection of present application")(Final Office Action, page 2), which is improper.

Additionally, because the Examiner has apparently made an obviousness determination based on a single claim element (e.g., "a switching fabric") instead of examining the subject matter of Claims 1-35 of the present Application as a whole, the Examiner has apparently overlooked additional limitations that further evidence that Claims 1-35 of the present Application are patentably distinct from the claims of co-pending application serial no. 10/086,060. For example, independent Claim 4 of co-pending application serial no. 10/086,060 recites "a switching fabric operable to dynamically couple select one or more of the plurality of visualization resource units to select one or more of the plurality of compute resource units" (emphasis added). Independent Claims 5 and 6 of co-pending application serial no. 10/086,060 recite "a switching fabric operable to dynamically couple select one or more of the plurality of

visualization resource units to select one or more of the plurality of compute resource units" (emphasis added). Independent Claims 12-14 of co-pending application serial no. 10/086,060 each recite "a switching fabric coupling the plurality of second compute resource units to the plurality of first compute resource units, the switching fabric operable to dynamically selectively couple outputs of the plurality of first compute resource units to inputs of the plurality of second compute resource units" (emphasis added). Independent Claim 27 of co-pending application serial no. 10/086,060 recites "first resource means," "second resource means" and "means for dynamically selectively coupling one or more outputs of the first resource means to one or more inputs of the second resource means" (emphasis added). Independent Claim 29 of co-pending application serial no. 10/086,060 recites "receiving a graphics visualization job," "determining compute resource requirements for the job," "determining compute resource availability," "allocating compute resources," "determining destinations to receive results of the job" and "allocating and configuring communication channels." Independent Claim 35 of co-pending application serial no. 10/086,060 recites "a first switching fabric coupling the plurality of graphics pipelines to the plurality of compute resource units, the first switching fabric operable to selectively couple outputs of the plurality of compute resource units to inputs of the plurality of graphics pipelines" and "a second switching fabric coupling the plurality of compositors to the plurality of graphics pipelines, the second switching fabric operable to selectively couple outputs of the plurality of graphics pipelines to inputs of the plurality of compositors" (emphasis added).

In contrast, pending Claims 1-35 of the present Application do not include the noted limitations. Nor do the claims of co-pending application serial no. 10/086,060 disclose, teach or suggest a "network compositor operable to synchronize the received pixel data from the plurality of visualization resource units and composite the synchronized pixel data into a least one image" as recited by independent Claim 1 of the present Application (emphasis added), "a traffic controller located remotely from at least one of the plurality of second resource units . . . and operable to collect the second set of data from the plurality of second resource units and control a data transmission rate of at least one of the plurality of second resource units to synchronize the collected data" as recited by independent Claim 10 of the present

Application (emphasis added), "controller means coupled to the plurality of second resource means for receiving the plurality of second data therefrom and operable to control a data transmission rate of at least one of the plurality of second resource means to synchronize and composite the plurality of second data" as recited by independent Claim 19 of the present Application (emphasis added), "receiving the plurality of sets of rendered pixel data synchronizing the plurality of sets of pixel data for an image frame from different sources by controlling a data transmission rate of at least one of the different sources" as recited by independent Claim 25 of the present Application (emphasis added), or "a network compositor communicatively coupled to the plurality of local compositors via a network and operable to synchronize and composite graphics data received from the plurality of local compositors into at least one graphical image" as recited by independent Claim 32 of the present Application (emphasis added).

Accordingly, at least for the reasons discussed above, Applicant respectfully submits that Claims 1-35 of the present Application are patentably distinct from the claims of co-pending application serial no. 10/086,060.

CONCLUSION

Applicant has demonstrated that the present invention as claimed is clearly patentably distinct from the claims co-pending application serial no. 10/086,060. Therefore, Applicant respectfully requests the Board of Patent Appeals and Interferences to reverse the final rejection of the Examiner and instruct the Examiner to issue a notice of allowance of all claims.

The Commissioner is authorized to charge the statutory fee of $500.00 to Deposit Account No. 08-2025 of Hewlett-Packard Company. Although no other fee is believed due, the Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 08-2025 of Hewlett-Packard Company.

Respectfully submitted,

Date: March 17, 2005

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CLAIMS APPENDIX

1. A distributed resource system, comprising:

a plurality of compute resource units operable to execute graphics applications and generate graphics data;

a plurality of visualization resource units communicatively coupled to the plurality of compute resource units and operable to render pixel data from the graphics data;

a first network;

a network compositor coupled to the plurality of visualization resource units via the first network and operable to receive the pixel data therefrom, the network compositor operable to synchronize the received pixel data from the plurality of visualization resource units and composite the synchronized pixel data into a least one image; and

a plurality of display devices at least one of which is located remotely from the plurality of compute resource units and coupled to the network compositor operable to display the at least one image.

2. The system, as set forth in claim 1, further comprising a second network coupling the plurality of display devices to the network compositor.

3. The system, as set forth in claim 1, wherein the plurality of visualization resource units comprise a graphics engine rendering the pixel data.

4. The system, as set forth in claim 1, wherein the plurality of visualization resource units comprise a plurality of local compositors coupled to a graphics engine operable to composite rendered pixel data into at least one image.

5. The system, as set forth in claim 1, wherein the plurality of display devices are operable to display at least one image across multiple display devices.

6. The system, as set forth in claim 1, further comprising a plurality of data storage devices coupled to the compute resource units.

7. The system, as set forth in claim 1, wherein the first network comprises an intranet.

8. The system, as set forth in claim 1, wherein the first network is selected from a group consisting of Internet, wide area network, local area network, and extranet.

9. The system, as set forth in claim 1, wherein the second network comprises an intranet.

10. A distributed resource system, comprising:

a plurality of distributed first resource units operable to generate a first set of data;

a plurality of second resource units operable to generate a second set of data in response to the first set of data;

a traffic controller located remotely from at least one of the plurality of second resource units and communicatively coupled to the plurality of second resource units and operable to collect the second set of data from the plurality of second resource units and control a data transmission rate of at least one of the plurality of second resource units to synchronize the collected data; and

a plurality of display devices coupled to the traffic controller and operable to receive the synchronized data for display to a plurality of users.

11. The system, as set forth in claim 10, wherein the plurality of display devices are coupled to the plurality of first and second resource units via a network.

12. The system, as set forth in claim 10, wherein the traffic controller is coupled to the plurality of second resource units via a network.

13. The system, as set forth in claim 10, wherein the traffic controller is coupled to the plurality of second resource units via an intranet.

14. The system, as set forth in claim 10, wherein the traffic controller is coupled to the plurality of second resource units via a network selected from a group consisting of Internet, wide area network, local area network, and extranet.

15. The system, as set forth in claim 10, wherein the plurality of second resource units comprise a graphics engine rendering the pixel data.

16. The system, as set forth in claim 10, wherein the plurality of second resource units comprise a plurality of local compositors coupled to a graphics engine operable to composite rendered pixel data into at least one image.

17. The system, as set forth in claim 15, wherein the traffic controller comprises a network compositor coupled to the plurality of second resource units via a network and operable to receive the rendered pixel data therefrom, the network compositor operable to synchronize rendered pixel data for each image frame and composite the received pixel data into one or more images.

18. The system, as set forth in claim 10, wherein the plurality of display devices are located remotely from the plurality of first and second resources units.

19. A distributed resource system, comprising:

a plurality of first resource means executing at least one computer application and generating a plurality of first data;

a plurality of second resource means coupled to the plurality of first resource means for generating a plurality of second data from the plurality of first data received from the plurality of first resource means;

controller means coupled to the plurality of second resource means for receiving the plurality of second data therefrom and operable to control a data transmission rate of at least one of the plurality of second resource means to synchronize and composite the plurality of second data; and

display means coupled to the controller means for receiving and displaying the synchronized and composited data therefrom.

20. The distributed resource system, as set forth in claim 19, wherein the plurality of second resource means comprise a graphics engine rendering pixel data.

21. The distributed resource system, as set forth in claim 19, wherein the plurality of second resource means comprise a plurality of local compositors coupled to a graphics engine operable to composite rendered pixel data into at least one image.

22. The distributed resource system, as set forth in claim 19, further comprising data storage means coupled to the first resource means for storing data.

23. The distributed resource system, as set forth in claim 19, wherein the controller means comprises a network compositor operable to receive pixel data from the second resource means and synchronize and composite the pixel data into a plurality of images for display on the display means.

24. The distributed resource system, as set forth in claim 19, where in the controller means comprises a network compositor operable to receive pixel data from the second resource means, composite the pixel data into a plurality of images for display on the display means, and throttle those second resource means which are sending data substantially faster than other second resource means.

25. A distributed resource graphics processing method, comprising:

generating a plurality of sets of graphics data at geographically disparate locations;

rendering the plurality of sets of graphics data and generating a plurality of sets of rendered pixel data;

receiving the plurality of sets of rendered pixel data synchronizing the plurality of sets of pixel data for an image frame from different sources by controlling a data transmission rate of at least one of the different sources and compositing pixel data associated with the same image frames into at least one image; and

displaying the at least one image.

26. The method, as set forth in claim 25, wherein receiving the rendered pixel data comprises receiving the rendered pixel data at a central location located remotely from at least one of the geographically disparate locations.

27. The method, as set forth in claim 25, further comprising sending the rendered pixel data over an intranet to a network compositor operable to synchronize and composite the pixel data.

28. The method, as set forth in claim 25, further comprising sending the synchronized and composited pixel data over a network to a plurality of display devices operable to display the at least one image.

29. The method, as set forth in claim 25, wherein receiving and synchronizing the pixel data comprises:

receiving a plurality of data packets from a plurality of sources;

extracting the pixel data from the data packets;

determining a frame identifier for the extracted pixel data; and

compositing extracted pixel data having the same frame identifier.

30. The method, as set forth in claim 29, further comprising:

slowing down sources sending data packets substantially ahead of other sources;

storing extracted pixel data received ahead of time; and

compositing stored extracted pixel data with later-arriving extracted pixel data having the same frame identifier.

31. The method, as set forth in claim 30, wherein slowing down sources comprises sending a throttle control message to the sources.

32. A distributed graphics visualization architecture, comprising:

a plurality of compute resource units;

a plurality of graphics pipelines coupled to the plurality of compute resource units;

a plurality of local compositors coupled to the plurality of graphics pipelines;

a network compositor communicatively coupled to the plurality of local compositors via a network and operable to synchronize and composite graphics data received from the plurality of local compositors into at least one graphical image; and

a plurality of display devices coupled to the network compositors and operable to receive and display the at least one graphical image.

33. The architecture, as set forth in claim 32, wherein the plurality of display devices are coupled to the network compositor via a network.

34. The architecture, as set forth in claim 32, wherein the network coupling the network compositor to the plurality of local compositors comprises an intranet.

35. The architecture, as set forth in claim 32, wherein the network coupling the network compositor to the plurality of local compositors comprises the Internet.

EVIDENCE APPENDIX

CLAIMS OF CO-PENDING APPLICATION

SERIAL NO. 10/086,060

2. The system, as set forth in claim 4, wherein the plurality of display devices is coupled to the one or more select visualization resource units via a network.

3. The system, as set forth in claim 6, wherein the plurality of visualization resource units comprise:

a graphics engine; and

a plurality of compositors coupled to the graphics engine.

4. A centralized resource system, comprising:

a plurality of compute resource units;

a plurality of visualization resource units;

a switching fabric operable to dynamically couple select one or more of the plurality of visualization resource units to select one or more of the plurality of compute resource units for generating at least one graphical image from a plurality of graphical images; and

a plurality of display devices coupled to the one or more select visualization resource units operable to display the at least one graphical image, wherein the plurality of visualization resource units comprise:

a plurality of graphics pipelines;

a plurality of compositors; and

a second switching fabric coupling the compositors to the plurality of graphics pipelines.

5. A centralized resource system, comprising:

a plurality of compute resource units;

a plurality of visualization resource units;

a switching fabric operable to dynamically couple select one or more of the plurality of visualization resource units to select one or more of the plurality of compute resource units for generating at least one graphical image from a plurality of graphical images; and

a plurality of display devices coupled to the one or more select visualization resource units operable to display the at least one graphical image, wherein the plurality of visualization resource units comprise:

a plurality of graphics pipelines;

a plurality of converters each coupled to a respective graphics pipeline, each converter operable to packetize data from a graphics pipeline;

a plurality of compositors; and

a second switching fabric coupling the plurality of compositors to the plurality of converters.

6. A centralized resource system, comprising:

a plurality of compute resource units;

a plurality of visualization resource units;

a switching fabric operable to dynamically couple select one or more of the plurality of visualization resource units to select one or more of the plurality of compute resource units for generating at least one graphical image from a plurality of graphical images; and

a plurality of display devices coupled to the one or more select visualization resource units operable to display the at least one graphical image; and

an agent operable to determine a requirement for computing resource units, determine a requirement for visualization resource units, and allocate the computing resource units and visualization resource units.

7. The system, as set forth in claim 4, wherein the switching fabric comprises a crossbar switch.

8. The system, as set forth in claim 5, wherein the second switching fabric comprises a crossbar switch.

10. The system, as set forth in claim 12, wherein the plurality of display devices is coupled to the plurality of first and second resource units via a network.

11. The system, as set forth in claim 14, wherein the plurality of second resource units comprise:

a graphics engine; and

a plurality of compositors coupled to the graphics engine.

12. A centralized resource system, comprising:

a plurality of first compute resource units;

a plurality of second compute resource units;

a switching fabric coupling the plurality of second compute resource units to the plurality of first compute resource units, the switching fabric operable to dynamically selectively couple outputs of the plurality of first compute resource units to inputs of the plurality of second compute resource units, the first and second plurality of compute resource units operable to function together to generate at least one execution result; and

a plurality of display devices coupled to the plurality of first and second compute resource units and operable to receive the execution results therefrom, wherein the plurality of second resource units comprise:

a plurality of graphics pipelines;

a plurality of compositors; and

a second switching fabric coupling the plurality of compositors to the plurality of graphics pipelines, the second switching fabric operable to selectively couple outputs of the plurality of graphics pipelines to inputs of the plurality of compositors.

13. A centralized resource system, comprising:

a plurality of first compute resource units;

a plurality of second compute resource units;

a switching fabric coupling the plurality of second compute resource units to the plurality of first compute resource units, the switching fabric operable to dynamically selectively couple outputs of the plurality of first compute resource units to inputs of the plurality of second compute resource units, the first and second plurality of compute resource units operable to function together to generate at least one execution result; and

a plurality of display devices coupled to the plurality of first and second compute resource units and operable to receive the execution results therefrom, wherein the plurality of second resource units comprise:

a plurality of graphics pipelines;

a plurality of converters each coupled to a respective graphics pipeline, each converter operable to packetize data from a graphics pipeline;

a plurality of compositors; and

a second switching fabric coupling the plurality of compositors to the plurality of converters, the second switching fabric operable to selectively couple outputs of the plurality of converters to inputs of the plurality of compositors.

14. A centralized resource system, comprising:

a plurality of first compute resource units;

a plurality of second compute resource units;

a switching fabric coupling the plurality of second compute resource units to the plurality of first compute resource units, the switching fabric operable to dynamically selectively couple outputs of the plurality of first compute resource units to inputs of the plurality of second compute resource units, the first and second plurality of compute resource units operable to function together to generate at least one execution result; and

a plurality of display devices coupled to the plurality of first and second compute resource units and operable to receive the execution results therefrom; and

an agent operable to determine a requirement for the first resource units, determine a requirement for the second resource units, and allocate the first and second resource units in response thereto.

15. The system, as set forth in claim 12, wherein the switching fabric comprises a crossbar switch.

16. The system, as set forth in claim 13, wherein the second switching fabric comprises a crossbar switch.

17. The system, as set forth in claim 12, wherein the plurality of display devices are located remotely from the plurality of first and second resource units.

18. The system, as set forth in claim 12, wherein the plurality of display devices is coupled to the plurality of first and second resource units via a computer network.

19. The system, as set forth in claim 12, wherein the plurality of display devices is coupled to the plurality of first and second resource units via an Intranet.

20. The system, as set forth in claim 12, wherein the plurality of first resource units comprise central processing units.

21. The system, as set forth in claim 12, wherein the plurality of second resource units comprise central processing units.

23. The centralized resource system, as set forth in claim 27, further comprising second means for selectively coupling one or more outputs of the second resource means to inputs of the plurality of display means.

24. The centralized resource system, as set forth in claim 23, wherein the second selectively coupling means comprise means for switching.

25. The centralized resource system, as set forth in claim 27, wherein the selectively coupling means comprises means for switching.

26. The centralized resource system, as set forth in claim 27, wherein the second resource means comprise:

means for generating graphics data; and

means for compositing the graphics data coupled to the means for generating graphics data.

27. A centralized resource system, comprising:

first resource means;

second resource means;

means for dynamically selectively coupling one or more outputs of the first resource means to one or more inputs of the second resource means; and

a plurality of display means coupled to the first and second resource means and operable to receive and display execution results therefrom; and

agent means for determining a requirement for the first resource means, determining a requirement for the second resource means, and allocating the first and second resource means in response thereto.

28. The centralized resource system, as set forth in claim 27, further comprising data storage means coupled to the first resource means for storing data.

29. A method of controlling and allocating compute resources, comprising:

receiving a graphics visualization job to be executed by a plurality of compute resources;

determining compute resource requirements for the job;

determining compute resource availability;

allocating compute resources from the plurality of compute resources in response to the determined compute resource requirements and availability;

determining destinations to receive results of the job; and

allocating and configuring communication channels from the allocated compute resources to the determined destinations.

30. The method, as set forth in claim 29, further comprising:

determining visualization resource requirements for the job;

determining visualization resource availability; and

allocating visualization resources in response to the compute resource requirements and availability.

31. The method, as set forth in claim 30, further comprising:

determining second communication channels from the allocated computing resources to the allocated visualization resources; and

allocating the second communication channels.

32. The method, as set forth in claim 30, further comprising initiating the job.

33. The method, as set forth in claim 30, wherein allocating communication channels comprises configuring a switch coupled between the allocated compute resources to the determined destinations.

34. The method, as set forth in claim 31, wherein allocating the second communication channels comprises configuring a second switch coupled between the allocated compute resources to the allocated visualization resources.

35. A graphics visualization architecture, comprising:

a plurality of compute resource units;

a plurality of graphics pipelines;

a first switching fabric coupling the plurality of graphics pipelines to the plurality of compute resource units, the first switching fabric operable to selectively couple outputs of the plurality of compute resource units to inputs of the plurality of graphics pipelines;

a plurality of compositors; and

a second switching fabric coupling the plurality of compositors to the plurality of graphics pipelines, the second switching fabric operable to selectively couple outputs of the plurality of graphics pipelines to inputs of the plurality of compositors.

36. The architecture, as set forth in claim 35, further comprising a plurality of display devices coupled to the plurality of compositors and operable to receive and display rendered graphical images received from the plurality of compositors.

37. The architecture, as set forth in claim 35, wherein the plurality of display devices is coupled to the plurality of compositors via the Internet.

38. The architecture, as set forth in claim 35, further comprising an agent operable to determine a requirement for the compute resource units, determine a requirement for the graphics pipelines, and allocate the compute resource units and graphics pipelines in response thereto.

39. The architecture, as set forth in claim 35, wherein the first and second switching fabrics each comprises a crossbar switch.